

7. Summary

Molecular biological studies on *Mycobacterium avium-intracellulare* complex isolated from slaughtered pigs and wildlife animals in Germany.

This study focuses on laboratory investigation of mycobacteria from lymph nodes of pigs and molecular epidemiology of *Mycobacterium avium-intracellulare* complex (MAIC) among groups of pigs and wild animals. The sampling method was performed in form of the cross sectional study. The result of screening by staining direct smears of lymph node materials by Ziehl-Neelsen shows relatively low sensitivity (81.16%), when compared with the culture method. Ogawa culture medium is the most suitable culture medium for the first isolation with the highest positive rate but culturing on Löwenstein-Jensen (LJ) and Stonebrink (S) culture media should be performed in parallel, since some isolates grew only on LJ and/or S media.

Pigs from a single “ecological” farm had a definitive higher prevalence of mycobacterial burden (60.46%) than pigs from conventional husbandry and management (32.05%). From the 118 infected pigs 35 of them (29.66%) showed MAIC infection in multi-organ associated lymph nodes. The results from this study show that the presence of mycobacteria in one or more organ-associated pig lymph nodes shows the possibility as infection source for consumers especially because no pathoanatomical lesions had been observed.

The most frequent MAIC confirmed by PCR is *Mycobacterium (M.) avium* ssp. *hominissuis* followed by *M.avium* ssp. *avium* and in rare cases *M. intracellulare*. RFLP and PFGE show high degree of intra-subspecies discrimination. But no relationship between RFLP and PFGE groups have been observed in subspecies level.

In PFGE *M. avium* ssp. *hominissuis* isolated from pigs slaughtered in Essen (Lower Saxony), Meiningen (Thuringia) and wild animals from Thuringia showed surprisingly close genetic relationship and at the same time showed close similarity to strains from Cloppenburg isolated from cattle in 2000. Using RFLP clonal relationship among these strains could not be detected.

Therefore PFGE seems to be more suitable for large scale epidemiological studies over time.